

Forensic Pathology Consultants, INC.
Dr. Ian Hood
550 Spring Lane
Philadelphia, PA 19128

January 24, 2006

Matthew A. Casey, Esquire
Kline & Specter
Attorneys at Law
Nineteenth Floor, 1525 Locust Street
Philadelphia, PA 19102

RE: James H. Gorbey Jr., Adm. of the Estate of Marissa Rose Fishman
v. Ashland Construction Company, Inc., et al

Dear Attorney Casey:

At your request I have reviewed the following materials you have provided me in respect of the above matter: copy of the civil complaint; New Castle County Police Department report; Records of Marissa Fishman from Alfred I. Dupont Institute. Having reviewed this material I would offer the following brief comments on the cause of death of Marissa Fishman and the pain and suffering she endured consequent thereon.

Marissa Fishman was a healthy, active 20-month-old infant on August 30, 2002 who was visiting her grandparent's residence in Wilmington Delaware along with other family members including other children. This residence had a large patio and partly enclosed pool which was separated from the residence by a sliding glass door that would normally have been kept closed at all times while children were in the house. Unfortunately on this date a group of workmen were working in the patio area and left this door open with the sad result that Marissa was subsequently found floating lifeless in the pool a few minutes after the residents of the house noted her absence. Her mother dove into the pool and immediately retrieved Marissa and thereafter initiated cardiopulmonary resuscitation, which was continued by the first responding emergency medical personnel who transported her to Alfred I. Dupont Hospital. She arrived unresponsive and without vital signs with cardiopulmonary resuscitation in progress and after several rounds of resuscitation medications and further intensive resuscitative efforts, Marisa's heart began to beat spontaneously and she was transferred to an intensive care unit deeply unconscious and fully ventilator dependent. However, it was obvious that Marissa had sustained irreversible brain damage and she remained severely acidotic with multiple episodes of bradycardia that necessitated reintroduction of cardiopulmonary resuscitation until death was pronounced some nine hours after her retrieval from the pool.

Death can result from immersion in water by different mechanisms of which the most common is asphyxial drowning where the individual holds their breath for as long as possible but finally inhales water which displaces air from the airways and distal air sacs and permits free exchange between the blood in the pulmonary capillaries and the water in the alveoli. Since there is now little oxygen in the air sacs, the blood returning to the heart can no longer provide oxygen to be distributed to those organs in the body most in need of it, particularly the brain which by this time will have already been rendered extremely hypoxic, and death can occur from asphyxia by this mechanism.

A not uncommon phenomenon is that of so-called "dry" drowning where, on attempting to breathe cold water, the larynx responds to this noxious stimulus by contracting and closing the vocal cords over the tracheal inlet. This stops any water from entering the lungs but also stops any further exchange of oxygen with the blood circulating through the lungs and so death is caused by asphyxia.

Alternatively, and more rapidly, if one breathes in fresh water upon immersion in it this fresh water in the alveoli will rapidly begin achieving osmotic equilibrium across the alveolar membranes with the blood in the pulmonary capillaries diluting it and greatly altering the ionic concentrations in the blood now returning to and bathing the heart. Since the heart relies for its normal electrical function on a very strictly controlled ionic milieu this sudden change in that environment can result in an almost instantaneous fatal cardiac dysrhythmia within seconds of first inhaling fresh water and explains why some individuals who are retrieved within a minute of entering the water are found to be unconscious and in cardiorespiratory arrest within a time frame shorter than most individuals could simply hold their breath.

Statistically, the asphyxial modes of death make up the bulk of deaths by drowning and take at least a few minutes to cause death. Most healthy individuals can hold their breath for one to two minutes during which their brain responds to increasing hypoxia with an increasingly urgent sensation to breathe. Surprisingly, infants and young children still tend to reflexively hold their breath when immersed in water even if unable to understand the consequences of inhaling water. Individuals who remain submerged and unable to breathe quickly use up their available reserves of oxygen and begin to see spots and flashing lights, become dizzy and then faint into unconsciousness. This period of consciousness lasts in most people for one to two minutes but in a practiced breath holder can exceed even four minutes. Infants seem to be somewhat more resistant to hypoxia and their period of consciousness could be expected to be longer rather than shorter than the average. During this period of consciousness, while the affected individual is struggling at and just under the water's surface, it is noteworthy that very few victims of drowning seem to have been able to summon assistance and it is not surprising that no one heard Marissa cry out or make much of a disturbance in the water. Hence, there are many

instances of drowning in bodies of water such as public pools that are quite crowded with other people who have thus remained unaware of the drowning individual literally within feet of them. It would be normal behavior for a panic stricken young child, such as Marissa, to devote all of her energies to attempting to breath air rather than water and she was undoubtedly too young to know that she needed to attempt to float with her mouth and nose just above the water's surface and form a plan for propelling herself to the edge of the pool or even simply float and call for assistance even though it would have been rapidly available.

The sensation of wanting to breathe but being unable to do so is extremely distressing and within common experience. A 20 month old could be expected to experience the same level of pain and suffering during this period of struggling for breath as would any competent adult and although not as capable as an adult of contemplating her death as the expected outcome if she cannot succeed in drawing breath while in the water, she would nonetheless be as panic stricken at her inability to breathe as would any adult. There was no reason to indicate that Marissa would not have been as frantic and panic stricken as any conscious individual in the same circumstances.

It is therefore my opinion offered within a reasonable medical certainty and in light of my training, education and experience that Marissa Rose Fishman most probably suffered one to two minutes of extreme air hunger as she struggled at the water's surface and started to drown with its consequent pain and suffering and the increasing panic and terror that could be expected to consume a 20 month old even if not capable of contemplating that their life was coming to an end. I hope these opinions and observations are of assistance to you.

Yours truly,



Ian C. Hood, MB,ChB, J.D., Forensic Pathologist
for Forensic Pathology Consultants, Inc.

CURRICULUM VITAE

NAME: Ian Clark Hood
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EDUCATION:

High School: Mt. Roskill Grammar School, Auckland 1965-69
University: School of Medicine, University of Auckland
1970-76 Degrees awarded - BSc MSc(hons) MB,ChB
School of Law, Temple University
1996-99 Degree awarded - JD

HOSPITAL TRAINING:

1976-79 Auckland Hospital Board
1976-78 Rotating Internship -
(Degree Awarded - Dip. Obstetrics)
1979 Pathology Residency
1979-84 McMaster University Medical Center
1979-84 Pathology Residency
1984-85 William Beaumont Hospital
1984-85 Surgical Pathology Fellowship
1985-86 Wayne County Medical Examiner's Office
1985-86 Forensic Pathology Fellowship

FACULTY APPOINTMENTS:

1985-87 Clinical Assistant Professor of Pathology
Wayne State University
1990- Clinical Assistant Professor of Pathology
Hahnemann University
1992- Adjunct Assistant Professor of Pathology
University of Pennsylvania

SPECIALTY BOARDS:

American Board of Pathology Diploma in Anatomic Pathology and Clinical Pathology - June 1983, Recertified 1999

Royal College of Physicians and Surgeons of Canada Diploma in General Pathology - 1984

Royal College of Physicians and Surgeons of Canada Diploma in Anatomic Pathology - June 1984

American Board of Pathology Certificate of Special Competence in Forensic Pathology - May 1985

GENERAL MEDICAL LICENSES:

New Zealand	- 1978
New York	- 1983 #155358
Michigan	- 1984 #47161
California	- 1984 #A41334
Pennsylvania	- 1989 MD044789E
Texas	- 1991 J0530
New Jersey	- 1992 58671

STATE MEDICAL BOARD DISCIPLINARY ACTIONS:

Pennsylvania 1993 - fined for failure to timely renew medical license

California 1994 - fined for above offence in Pennsylvania

COLLEGES AND SOCIETIES:

Canadian Association of Pathologists
College of American Pathologists
American Society of Clinical Pathologists
New York Academy of Sciences
American Association for the Advancement of Science
American Academy of Forensic Sciences
National Association of Medical Examiners

PROFESSIONAL EMPLOYMENT:

1986-88 Assistant Medical Examiner of Wayne County,
Detroit, MI

1988-1989 Glenview Pathology Medical Group,
Los Angeles, CA

1989-Present Deputy Medical Examiner, Philadelphia, PA

POST-GRADUATE NON-SPECIALTY BOARD EXAMINATIONS:

1976 Educational Commission for Foreign Medical Graduates
1980 Licentiate of the Medical Council of Canada
1981 Visa Qualifying Examination
1982 Federation of State Medical License Examiners

PUBLICATIONS:

1. Omojola MF, Hood IC, Stevenson GW. Calcified Gastric Duplication. *Gastrointest Radiol* 5:235-8, 1980.
2. Hood IC, Qizilbash AH, Salama SS, Alexopoulou I. Basal Cell Adenoma of Parotid: Difficulty of Distinguishing from Adenoid Cystic Carcinoma on Aspiration Biopsy. *Acta Cytol* 27:515-20, 1983.
3. Hood IC, Whyte RK, deSa DJ. The Inflammatory Response in Candidal Chorioamnionitis. *Hum Pathol* 14:984-90, 1983.
4. Hood IC, Qizilbash AH, Young JEM, Archibald SD. Fine Needle Aspiration Cytology of Paragangliomas: Cytologic, Light Microscopic and Ultrastructural Studies of 3 Cases. *Acta Cytol* 38:157-64, 1984.
5. Hood IC, Qizilbash AH, Young JEM, Archibald SD. Needle Aspiration Cytology of a Benign and a Malignant Schwannoma. *Acta Cytol* 38:157-64, 1984.
6. Hood IC, Qizilbash AH, Salama SS, Young JEM, Archibald SD. Needle Aspiration Cytology of Sebaceous Carcinoma. *Acta Cytol* 28:305-12, 1984.
7. Hood IC, Campbell EJM. Is pK OK? *New Engl J Med* 306:864-5, 1982.
8. Hood IC, Young JEM. Late Sequellae of Superficial Irradiation. *Head Neck Surg* 7:65-72, 1984.
9. Hood IC, Jones BA, Watts JC. Mucinous Carcinoid Tumor of Appendix Presenting as Bilateral Ovarian Metastases. *Arch Path Lab Med* 110:336-40, 1986.
10. Hood IC, Mirchandani H, Monforte J, Stacer W. Immunohistochemical Demonstration of Homicidal Insulin Injection Site. *Arch Path Lab Med* 110:973-4, 1986.
11. Hood IC, Qizilbash AH, Salama SS, Young JEM, Archibald SD. Sebaceous Carcinoma of the Face Following Irradiation. *Am J Dermatopath*, 8:505-508, 1986.

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13. Ratanaproeksa C, Hood I, Mirchandani H. Single Gunshots with Multiple Entrances. Am J Forensic Med. Pathol. 9:212-214, 1988.
14. Hood I, Monforte J, Gault R, Mirchandani H. Fatality from Illicit Phenidimetrazine Use. Clin. Toxicol. 26:249-55, 1988.
15. Campbell S, Hood I, Ryan D, Biedrzycki L, Mirchandani H. Death as a Result of Asthma in Wayne County Medical Examiner Cases, 1975-1987. J. Forensic Sciences 35; 356-364, 1990.
16. Hood I, Ryan D, Monforte J, Valentour J. Cocaine in Wayne County Medical Examiner's Cases. J. Forensic Sciences 35:591-600, No. 3. May 1990.
17. Schierer C, Hood I, Mirchandani H. Atherosclerotic Cardiovascular Disease and Sudden Death in Young Adults in Wayne County. Am. J. Forensic Medicine and Path. 11: 198-201, 1990.
18. Catomeris P, Monforte JR, Thibert RJ, Hood I. Lipid Peroxidation in Postmortem Blood of Fire Victims. Microchemical Journal 41: 271-277, 1990.
19. Manhoff DT, Hood I, Caputo F, Perry J, Rosen S, Mirchandani HG. Cocaine in decomposed human remains. J. Forensic Sciences 36: 1774-1777, No. 6. Nov. 1991.
20. Manhoff DT, Hood IC, Mirchandani HG. Homicide in Philadelphia in 1984 and 1989. Philadelphia Medicine 88: 303-306, July 1992.
21. Bennett MJ, Ragni MC, Hood IC, Hale DE. Comparison of post-mortem urinary and vitreous humour organic acids. Ann. Clin. Biochem. 29: 541-545, 1992.
22. Mirchandani HG, Rorke L, Sekula-Perlman A, Hood IC. Cocaine-induced agitated delirium, forceful struggle, and minor head injury. Am. J. Forensic Medicine and Path. 15: 95-99, 1994.
23. Weissgold DJ, Budenz DL, Hood IC, Rorke LB. Ruptured vascular malformation masquerading as battered/shaken baby syndrome: a nearly tragic mistake. Surv. Ophthalmol. 39: 509-512, 1995.
24. Mirchandani HG, McDonald G, Hood IC, Fonseca C. Heat-Related Deaths in Philadelphia-1993. Am. J. Forensic Medicine and Path. 17(2):106-108, 1996.

25. Crist TAJ, Washburn A, Hood IC, Hickey MA. Cranial bone displacement as a taphonomic process in potential child abuse cases. In: Haglund WD, Sorg MH, eds. *Forensic Taphonomy: the postmortem fate of postmortem remains*. Boca Raton: CRC Press, 1997: 309-336.
26. Hove E, Hood IC. Sudden death in epileptics: A 4-year experience in Philadelphia. *Philadelphia Medicine*. Volume 94: 107-110, 1998.